UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
ROSARIO, DENNIS

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	10/078,299	LIU, YING
Office Action Summary	Examiner	Art Unit	
	Dennis Rosario	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/14/06, 5/19/06*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,14-16 and 19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,14-16 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 May 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   The amendment was received on 4/14/06 and 5/19/06. Claims 11,14-16 and 19

are pending.

Drawings

2.   The drawings are objected to because figure 1 has the text: "Search Process,

which is applicable to image verification, identification, and retrieval." Which ought to be

deleted from figure 1 and inserted in the "BRIEF DESCRIPTION OF THE VIEWS OF

THE DRAWING" section of specification.

Figures 2-18 are objected for similar reasons as figure 1. Note that figure 5 of

4/14/06 has bold and underlined text that ought to be deleted from figure 5 and inserted

is said section. Any other figures that similarly have the bold or underlined text or text

ought to be deleted and inserted in a respective portion in said section.

3.   Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Specification

4.   Due to the amendment, the objections to the specification are withdrawn.

Claim Objections

5.   Due to the amendment, the objections to claims 1,3,9 and 12-18 are withdrawn;

however, new objections of claims 14,15 and 16 have arisen.

Regarding claim 14, has the phrase "the steps of specifying parameters" has no

antecedent basis and ought to be amended to "a step of specifying parameters".

Claims 15 and 16 are objected for similar reasons of claim 14,above.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7.   Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

Due to the amendment, the rejection of claim 19 is withdrawn; however, a new rejection of claim 19 has arisen. Claim 19 is not in a form that is statutory, meaning that claim 19 has to be in a form of a process, machine, manufacture or composition of matter. Claim 19 appears to be a process or method; however, the form of claim 19 is not clear. The examiner suggests amending claim 19 to be in the statutory form of a process or method:

A method of learning and recognition of images using an ABM learning algorithm, an ABM recognition algorithm, an APN learning algorithm, and an APN recognition algorithm comprising:

a)   classifying images with the ABM recognition algorithm via a stable distribution of an Markov chain; and

b)   extending the ABM recognition algorithm with APN recognition algorithm from a plurality of binary neural nets to multi-valued neural nets wherein extending further comprises:

b1)   computing a distance between two images.

Note that the preamble is not given patentable weight and will not be addressed. So only limitations a),b) and b1) are given patentable weight. If applicant wishes that the ABM learning algorithm and the APN learning algorithms be given patentable weight, then they ought to be introduced with an associated function after the preamble or more specifically after "comprising".

Claim Rejections - 35 USC § 112

8.   Due to the amendment, the rejection of claims 2-4 and 10 are withdrawn.

Response to Arguments

9.   Applicant's arguments on page3 of the amendment filed 4/14/06 have been fully

considered but they are not persuasive and states:

"API is not addressed by Liddy et al. at all."

The examiner agrees with the applicant that Liddy does not address the word or

name "API". However, the examiner can broadly determine using Plain Meaning (MPEP

2111.01) the functions of API in Liddy using figure 1 that constitute an API. First, the

examiner believes that an API broadly is a program with an associated interface that

allows a user to access a computer. Thus, Liddy's program is fig. 1,num. 20 that has an

associated interface fig.1, num. 16 that allows access to a computer or "network" in col.

5, line 56 which is a group of computers. If the applicant has another meaning of API

please provide a definition of API so that a Broadest Reasonable Interpretation (MPEP

2111) can be applied.

10.   Applicant's arguments on page 3, items 19A and 19B have been fully considered

but they are not persuasive and states:

"Drossu et al.'s invention is irrelevant here"

Due to the cancellation of claims 1 and 3, the combination of Drossu and Tsai is

moot since claim 14 is now a 102 rejection in view of Tsai, alone.

11.   Applicant's arguments on page 4 have been fully considered but they are not

persuasive and states:

"It is not 'obvious' how to associate a color image to another color image

in such a way that two color images are in the same 'Neighborhood' as

defined by a certain 'measure'."

The examiner could not find the corresponding context of the color image in

claim 15 or in the corresponding rejection in the office action of 1/24/06, pages 20,21.

Thus, the examiner cannot respond. Please indicate where the color image was found

that prompted the above statement.

12.   In response to applicant's argument on page 4 that the references fail to show

certain features of applicant's invention, it is noted that the features upon which

applicant relies (i.e., "...concepts...") are not recited in the rejected claim(s). Although

the claims are interpreted in light of the specification, limitations from the specification

are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057

(Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

13.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14.   Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Liddy et al.

(US Patent 6,304,864 B1).

Regarding claim 11, Liddy et al. discloses a computer implemented process (Fig.

1,num. 8) for content-based images verification, identification, retrieval, and

classification with software components, which use IVI-API as an application-

programming interface (Fig. 1,numerals 12,14 and 21 see paragraph 9, above).

15.   Claims 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by

Tsai (US Patent 6,697,504).

Regarding claim 14, Tsai discloses a computer implemented process, <u>wherein</u>

<u>the steps of specifying parameters</u> comprises:

a)   Sensitivity (Fig. 8, label: "FIRST LEVEL DECISION"), which defines a

distance (or "distances" in col. 2, line 1) between two neural ABM nets (or "units" in col.

2, line 1) generated by two images (or "each...image" in col. 2, line 2 for each

respective unit.) in a connection space (Fig. 7 shows a CONNECTION LAYER which is

interpreted as a space since a space would include a layer.) such that the distance can

be used to eliminate unmatched images (for image recognition purposes (see title).

Claim 16 is rejected the same as claim 14. Thus, argument similar to that

presented above for claim 14 is equally applicable to claim 16.

Claim Rejections - 35 USC § 103

16.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

17.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen

et al. (US Patent 6,459,809 B1) in view of Rajagopal et al. (US Patent 6,665,335 B1).

Regarding claim 15, Jensen teaches a computer implemented process, <u>wherein

the steps of specifying parameters</u> comprises:

a)   Blurring (or a "distance function" in col. 5, line 37), which measures

("measure" in col. 5, line 38) <u>a</u> distortion due to

a1)   data compression,

a2)   Translation,

a3)   Rotation,

a4)   Scaling

a5)   Intensity change, <u>or</u>

a6)   image format conversion and

b)   is implemented by enlarging a single image, <u>viewed as a point (or "point x"</u>

<u>in col. 7, line 42) in a image space ("neighborhood" in col. 7, line 43) where distances ("</u>

<u>'neighborhood'...with[ ]...distance" in col. 7, lines 35,36) are defined,</u> to a set of images

("neighborhoods" in col. 7, line 44) by using multiple distances (where each

neighborhood has a distance) that define the radius ("radius" in col. 7, line 41) of the

set.

However, Jensen et al. does not teach measuring a distortion due to rotation, but

does teach that a distance can "be implemented in various ways" in col. 5, lines 40-42

and provides several examples in col. 5, lines 42-48 which are used in a "metric space"

in col. 5, line 25 which "is well understood in the art" in col. 5, line 25. Thus, Jensen et

al. suggests finding a teaching that uses any one the distances that were used as

examples and using the distance in a metric space.

Rajagopal et al. teaches a metric space as shown in figures 11,12 and 20 and a

distance as shown by the arrow of fig. 20 and teaches the remaining limitation of

measuring distortion or ("shift" in col. 3, line 57 or "displacement" in col. 18, line 65) due

to translation and rotation ("spatial shift [and] rotation angle" in col. 3, line 59 or

"orientation" in col. 18, line 65, respectively.).

It would have been obvious at the time the invention was made to one of ordinary

skill in the art to modify Jensen et al.'s metric space with Rajagopal et al.'s teaching of

shift, because Rajagopal et al.'s teaching of shift is able to recreate the content stream

of Jensen et al.'s sporadic transmission.

18.   Claim 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Dimitrova

et al. (US Patent 6,754,389 B1) in view of Huang et al. (US Patent6,944,319 B1).

Regarding claim 19, Dimitrova teaches:

a)   the ABM learning algorithm ("training process" in col. 7, line 12);

b)   the APN learning algorithm;

c)   the ABM recognition algorithm (fig. 2,num. 200'), which classify (fig.

2,num. 250) images (fig. 2:FACE) via the stable distributions of the Markov (fig. 2,num.

220a) chains; and

d)   the APN recognition algorithm (fig. 2:OTHER TRAJECTORIES), which

extends ABM algorithm (since OTHER TRAJECTORIES is an addition to the system of

fig. 2,num. 2100') for binary neural nets to multi-valued neural nets by:

d1)   computing a distance between the two images.

Dimitrova does not teach the claimed:

a)   APN learning algorithm and

b)   the neural nets.

However, Dimitrova teaches that other detection systems can be added to the

system of fig. 2 as suggested by the dashed line box of fig. 2.

Huang teaches such a detection system of "face recognition" in the abstract and

the remaining limitation of claim 19 of:

    a)   <u>APN learning algorithm (fig. 2,num. 208) and</u>

    b)   <u>the APN recognition algorithm (fig. 2,num. 218) for binary neural nets to</u>

<u>multi-valued neural nets (or "generates a real-value vector instead of binary vector" in</u>

<u>col. 20, lines 45,46) by:</u>

        b1)   <u>computing a distance ("Hausdorff" in col. 2, line 67) between the</u>

<u>two images.</u>

It would have been obvious at the time the invention was made to one of ordinary

skill in the art to modify Dimitorova's fig.2: OTHER TRAJECTORIES with Huang's face

detection, because Huang's teaching can "recognize a person's face from...non-frontal

views of the person's face" in col. 2, lines 2-4.

Conclusion

19.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

20.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dennis Rosario whose telephone number is (571) 272-

7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

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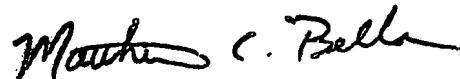
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